

Mr. Brandt received a specimen from Japan, which had been used as an ornament, in which nine specimens of this coral are grouped together in the hole formed by a *Pholas* in a soft rock. He figures this specimen; but I am convinced that this is not the way in which the Coral is naturally produced, and that they must have been artificially inserted into this perforation in the rock by the Japanese.

Mr. Reeves' specimen, which I first described, is the only one which has yet been described as imbedded in what I believe to be its proper habitat—a peculiar kind of Sponge; and I am confirmed in this opinion by the very intimate manner in which the Sponge is attached to the Coral in the above specimen.

Mr. Brandt figures two specimens to which more or less large portions of Sponges are attached, and he considers these Sponges to belong to the species which he calls *Spongia spinicrucis* and *Spongia octancyra*, t. 1. f. 3, 4 & 5.

Mr. Brandt divides his specimens into two genera: 1. *Hyalonema*, of which he describes two species, *H. Sieboldii* and *H. affinis*; 2. *Hyalochæta*, containing a single species, *H. Possieti*; but I must say, from the variation in the several specimens of this Coral which have come under my examination, I am very doubtful if they are more than varieties of the same kind: at any rate, we want much more material before I could admit them to be distinct. The genera appear to differ only in the elongation and non-elongation of the cells, which will doubtless vary according to the manner in which the specimen is preserved.

### *On the Generative Organs of the Scarabæideous Beetles.*

By C. ROUSSEL.

In all the *Scarabæidæ* the testes are formed of spherical, but more or less depressed capsules. A single genus is known to furnish an exception to this,—namely *Onthophagus*, in which they are conical. Their number, which varies sometimes, even in nearly allied groups, is never above twelve or below six in each testis; the latter number is by far the most frequent. They are usually more numerous in the *Cetoninæ*, and in this tribe their mode of insertion likewise presents a peculiar character: the cords which support these capsules usually arise from each other, instead of having a distinct origin.

The form and structure of the penis clearly separates the *Geotrupinæ* and *Coprinæ* from the rest of the family. In the former of these tribes it is short, straight, broad, and thick, and appears at the first glance to be composed only of a single, entirely horny piece. But of the two joints which compose this organ in all the *Scarabæidæ* there is only a vestige of the superior one, whilst the inferior piece has been developed at the expense of the abortive one. In the *Coprinæ* the two joints are nearly of the same size, but the upper one presents a characteristic border near the top. The position which it affects furnishes another means of distinction. In the other tribes it is directed from left to right, whilst in this it is always from right to left.

Beyond these two groups the penis presents a very remarkable

variability, not only between the divisions of a tribe, but sometimes even between the representatives of the same genus. The different species of Cockchafer and *Cetoniæ* furnish curious examples of this fact, which is still more striking in the *Anomala*. It is only between the most nearly allied species that we meet with a nearly complete similarity in the form of the organ of intromission. It would appear that Nature has taken the most minute care to prevent the mixture of types, and that crossing is practicable only within very restricted limits.

The female organs consist normally of two identical ovaries, formed of a number of sheaths corresponding exactly in each individual with that of the testicular capsules. These sheaths are united with each other and supported by a suspensory cord. There is also a more or less developed copulatory sac and some accessory glands.

The *Coprinae*, from which the *Aphodii* must be separated, present a very remarkable character,—namely, the occurrence, well known in Birds, of the abortion of the ovaries of the right side. That which exists, even, is reduced to a single sheath of considerable length. At its base there are several small vesicular appendages, the vestiges of the aborted sheaths.

In the *Geotrupinae* there is no apparent copulatory sac. The reservoirs destined to contain the seminal fluid of the male, which indeed are very small, are concealed beneath the muscular envelope of the base of the oviduct. In the *Cetoniinae* the sheaths are very short, and, as a consequence of this modification, the suspensory cord disappears.

In the *Glaphyrinae*, *Melolonthinae*, *Rutelinae*, and *Scarabæinae* neither the male nor the female generative organs present any marked differences.

From his investigations the author draws the following conclusions:—

1. There is always an almost exact similarity between the very nearly allied species of the same genus. This furnishes evidence in support of the happy definition of a genus given by M. Flourens.

2. Between two genera there are important modifications well adapted to characterize them.

3. These modifications, becoming more considerable in the representatives of higher groups, such as tribes, furnish valuable indications for zoologists.

4. The differences observed between the *Glaphyrinae*, *Melolonthinae*, *Rutelinæ*, and *Scarabæinae*, which are admitted as tribes, are not comparable in value to those which distinguish the *Cetoniinae*, and still less to those which separate the *Geotrupinae* and *Coprinae*.

5. In the case of types of which the natural relations could not be appreciated with certainty by the consideration either of the external characters or of certain internal organs, the knowledge of the generative apparatus allows their position to be more accurately determined. Of this the comparison of the *Arthropagi* and *Aphodii* furnishes a striking example.—*Comptes Rendus*, January 16, 1860, p. 158.